Faculty and Student Perspectives Toward Open Courseware, and Open Access Publishing:

Some Comparisons Between European and North American Populations

Joseph Hardin, Mujo Research

hardin@umich.edu

Aristóteles Cañero, Universidad Politecnica de Valencia

acanero@asic.upv.es

Keywords

Introduction

Instructor and student beliefs, attitudes and intentions toward contributing to local open courseware (OCW) sites have been investigated through campus-wide surveys at Universidad Politecnica de Valencia and the University of Michigan. In addition, at the University of Michigan, faculty have been queried about their participation in open access (OA) publishing. We compare the instructor and student data concerning OCW between the two institutions, and introduce the investigation of open access publishing in relation to open courseware publishing. We point out some places where these results can be of use in development of local OCW efforts, and invite participation in future surveys and analyses.

What Do We Know?

What do we know about the perceptions of teachers and students at our institutions of higher education regarding OCW? Or about their support of OCW initiatives at their local campuses? Or, crucially, about the intentions of teaching staff to contribute course materials to a prospective or nascent local site? At those schools that have some OCW presence there has been work done to see what students and faculty see as the benefits of OCW (MIT, 2010) and to determine the main on-campus uses of OCW materials, and some studies of all users, mainly using pop-up questionnaires, have been done to see how the materials are used (Lee, 2010). A series of studies are underway to evaluate the effectiveness of some kinds of OCW (Lane, 2008; Lovett, 2008). Some data has been collected to see how many incoming students use the existing OCW sites of universities as tools for evaluating those schools, and to what extent such evaluations figure in their decisions to attend (Carson, 2009). Relatively little has been done, and less published, that investigates teacher and student support for the development of local OCW sites.

But there is a line of reasoning that would hold that the beliefs, attitudes and intentions of faculty and students toward OCW are interesting areas of study in their own right, as windows onto evolving perceptions and practices in academia in the internet age, that they are a critical part of a well-motivated approach to the development of local OCW efforts, through providing information on the perspectives of local stakeholders toward OCW initiatives, and through providing useful information, sometimes revelatory, about support from various components of the local academic community. When this line of thinking is part of a local strategy for OCW development that weds top-down and bottom-up approaches to building support for local efforts, providing detailed information on the locations, levels and kinds of support for OCW within the local academic community, particularly the level of material contribution that can be expected from teaching staff and the various ways that they and students might see value in an institutional OCW site, then such studies can come into their own.

Results from these surveys can make clear the often widespread interest in OCW among teaching staff and students, thus encouraging the provision of support; provide information on disciplinary or departmental differences that might lead to effective targeting of early resources and the building of communities of peer support, often crucial to the growth of efforts beyond a small cadre of early adopters (cite); show already existing differences in approaches to openness that characterize some populations on campus, differences that might point to emerging changes in how teaching and learning are being done in the academy. These differences might be grounded in generational differences in experiences and relationships to emerging technologies and their use, or to the components of real value in teaching. At the inception of campus-wide discussions, such surveys can at the very least provide participants with well grounded data about the perspectives of members of the academic community toward open courseware and help move the discussion beyond anecdotal and individual perspectives.

Needless to say, such an approach of trying to understand the local community's perspectives and practices vis a vis OCW would be useful, from this perspective, in all the possible contexts of OCW formation, whether there was outside funding or high-level mandates or not. But the emphasis here, beyond the strong argument of the value of tracking and understanding what and how our students and faculty are thinking about and acting on open possibilities strictly from a curiosity for knowledge, is the use of these types of findings in building local, ground-up OCW efforts. Even though we have a growing OCW community internationally among our institutions of higher education, we still have not really begun to tap the wealth of resources available in our institutions, nor have we gone far in making clear the benefits of open practices, nor even, it may seem, in surfacing the significant support for such efforts that already exists in our institutions.

In this paper we will report on and discuss two OCW Contributor Surveys, at UPV and UM, that are embedded in larger local OCW efforts.   These two studies provide foundational information on what familiarity teaching staff and students have with OCW, and their perspectives on contributing materials or time to the creation of OCW for a local site. In addition the studies also shed light on aspects of "convince-ability" of those who might describe themselves as "Neutral" on a 5-point scale when answering questions on the OCW survey. This comes from the UPV study. Some initial results from a set of open access (OA) questions that were asked on the UM study in addition to the OCW questions, comparing faculty perspectives and participation in OA with their views on OCW are also presented, pointing toward relations between these two open resource initiatives, and informing possible strategies.

UM CTools and OCW Surveys and MISI Surveys

Over the last two years the Sakai Collaboration and Learning Environment (CLE) community has been conducting online surveys concerning faculty and student perceptions and use of educational technology. As the project website says: "MISI, or the Multi-Institutional Survey Initiative, is an endeavor among Sakai institutions to ask similar questions of instructors and students across Sakai implementations. Through this initiative, we hope to build on the successful 2009 effort to compare and contrast similarities and differences between institutions as well as provide feedback to improve Sakai development in the future."(Lonn-MISI, 2010a) This survey in 2010 has 30 institutional participants scattered around the world. See the MISI site for more information, a list of participants, a global map of participants, and aggregated results from the 2009 survey (Lonn-MISI, 2010b) .

The MISI surveys were built to some extent on a series of surveys done at UMich over the last 5 years directed at the Sakai-based CTools system. This survey first incorporated some OCW questions 3 years ago, in 2007. These questions have changed very slightly as an OCW site at UMIch has been developed, but have asked the same core set of questions around OCW familiarity, perceived value and use, and respondent intention to participate in OCW by contributing course materials, on the part of the teaching staff; or helping teaching staff prepare course materials for the OCW site on the part of students. A discussion of the results of the OCW questions asked on the 2008 and 2009 University of Michigan surveys can be found at Hardin, 2010. This past year, the UM survey also incorporated a set of questions about Open Access participation, use and perceptions on the part of the teaching staff.

For the 2010 MISI survey a number of the OCW questions that have been used on the University of Michigan CTools surveys were submitted for use by the MISI participants. Use of the questions was voluntary, as the whole MISI effort is, and 6 schools included them in their local surveys. The questions were translated for some of the local surveys. So, for the first time, we have

comparable data from schools in Europe as well as North America, and beyond the University of Michigan, that can inform us of similarities and differences among student and instructor populations concerning OCW.   A discussion and comparison of the results from the University of Danubius-Galati, Romania, and the University of Michigan 2010 surveys were the subject of a paper submitted to the IADIS conference in Timisuara, Romania, to be held in October, 2010. A pre-print can be found at http://www-personal.umich.edu/~hardin/Talks/IADIS2010-HardinOCW-finalpdf.pdf

The Universidad Politecnica de Valencia participated in the MISI educational technology surveys this year, and also asked the set of OCW questions.   A random sample of 30% of the instructors (n=800) were invited to respond, and a random sample of 5% of the students (n=1,920) stratified by college were invited as well across the set of OCW questions. They had responses from 230 instructors and 186 students; which resulted in response rates of 28.7% for instructors and 9.7% for students. In the University of Michigan survey for 2010 "all instructional faculty were invited to respond (n=7,626). There was a 13% response rate to the survey (n=1,017). A random sample of 25% of the student body, stratified by college/department, was invited to respond (n=9,095). There was a 16% response rate to the survey (n=1,415). The survey was administered online via UM.Lessons [a locally developed tool used for test and survey construction and administration] in April 2010. There was an incentive for instructor and student participants to be entered in a random drawing for $50 gift certificates (4 instructors and 4 students)." (Lonn, 2010)

Instructor and Student Knowledge and Perspectives on OCW

At the beginning of the survey a brief description of Open Courseware was given: "Open CourseWare (OCW) is a learning technology movement among a growing number of higher-ed institutions. Typically, faculty volunteer to have course material (e.g. syllabus, reading lists, exercises, lecture notes, example papers, tests, etc.) posted on a web site available to the public. The most well known such site is the MIT OCW site, where a large number of faculty have contributed to their institutional site. There are a number of OCW sites at other institutions as well." Then the respondents were asked a number of questions.

Both instructors and students were initially queried about their familiarity with Open Courseware. The results are displayed in Figures 1 and 2. About half (49.8%) of the University of Michigan faculty professed to have never heard of OCW. For the Valencia instructors about a third (35.2%) said they had never heard of OCW. 27.8% of Michigan instructors and 32.6% of Valencia

instructors said that while they had heard of OCW, they had never visited a site. So 77.6% of the Michigan and 67.8% of the Valencia instructors had never been to an OCW site. Among those remaining, who had visited, used material from or published to an OCW site, there was a higher percentage of Valencia instructors (11.3%) who had published OCW materials than Michigan instructors (2.7%). Although we can see the beginnings of OCW participation among survey respondents, particularly among the Valencia instructors, any way we approach these figures we find a very large component of our students and faculty who are deeply uninformed about open courseware.

Given this large base of ignorance concerning OCW, one might expect that instructors and students would be rather uninterested in OCW. But the responses to further questions leads us in another direction. When asked if they would contribute their course materials to a local OCW site, a considerable 45.2% of the Michigan and a whopping 85.8% of the Valencia instructors agree or strongly agree that they would. See Figure 3. For the Michigan instructors a further 31.5% are neutral on the question. Only 23.3% of the Michigan and 14.3% of the Valencia instructors disagree or strongly disagree with the notion of contributing their own course materials to a local OCW site. The first thing these data suggest is that at both institutions there is a significant community of potential OCW contributors, instructors who say they are willing to contribute their course materials to a local OCW site.

The second thing that is apparent is that the Valencia response options were constructed differently than the Michigan response options. The Valencia survey used a 4-point scale from Strongly Agree, through Agree, to Disagree, and finally to Strongly Disagree. The Michigan survey used a 5-point scale with a center option of Neutral. The differences between such approaches when using scales like this have been widely debated (see http://en.wikipedia.org/wiki/Likert_scale for a starting point, or), with the advantages and disadvantages of each for different purposes discussed. One question in this debate revolves around the issue of reliability: is it a good idea to force respondents to take a position on one side of the question or the other, increasing your information on their positions, or does such forcing of responses, without giving the option of a "neither agree or disagree" or "neutral" option, lead to unreliable data? Others have to do with the use of 4 versus 5 point scales in further analyses. But for us the question here is whether or not the difference in scales potentially provides any insight into the "Neutrals" in the 5 point scale. It is not uncommon to suggest in the interpretation of such 5 point scales that the "Neutrals" are open to arguments regarding the question at hand. Here it is the question of OCW contribution. And the Valencia data, while not providing anything in the way of proof, does provide us with a route to determine whether we can

consider those in the "Neutral" category as actually "leaners" toward contributing, whether they would be open to well motivated arguments. The method for investigating this of course is to use the alternate scale in a future version of the survey, for Valencia to use a 5-point scale or for Michigan to use a 4-point scale. For now, we are left with the suggestive nature of the data with respect to the Michigan Neutrals, and the very large support for OCW contribution that is apparent among Valencia respondents.

When asked whether they would use OCW materials from a local site themselves 55.7% of the Michigan instructors and 91.9% of the Valencia instructors agreed or strongly agreed. See Figure 4. And 38.3% of the Michigan and 96% of the Valencia instructors said they would encourage others to publish on the local site. See Figure 5. Again, while there is much more support for such activities at Universidad Politecnica de Valencia than the University of Michigan, there is considerable evidence both for a wide community of use at both schools and for peer support of publication.

When the survey asked students about their familiarity with OCW 75.5% of the Michigan students and a comparable 76.6% of Valencia students responded that they had never heard of OCW. See Figure 2. However, when asked if they would volunteer to help faculty publish course or other materials on the local site, 26.6% of the Michigan and 66.2% of the Valencia respondents agreed or strongly agreed.See Figures 6 and 7.   On the student questions, the Valencia survey used a 5-point response option. When asked if they would use the materials on a local OCW site 72.8% of the Michigan and 85.6% of the Valencia students agreed or strongly agreed. See Figures 6 and 7. When asked if they would encourage other students to use the materials 62.8% of the Michigan and 83.8% of the Valencia students agreed or strongly agreed. See Figures 6 and 7. Even though students at both schools evinced a low familiarity with OCW materials, when such materials were described to them, as in the survey description, they show considerable support for using, encouraging others to use and even helping with the construction of OCW materials.

OCW and Open Access

The University of Michigan survey had an additional set of questions on open access (OA) perceptions and practices among instructors. The questions asked about current attitudes and activity in publishing and using open access articles and about beliefs about the future importance of open access. See Figure 8. A deeper analysis of these questions in relation to OCW beliefs and intentions is underway, but here we will describe some of the early results.

The questions were prefaced with a definition of open access publishing: "Open Access (OA) publishing includes the practices of:

1. publishing in journals that make their contents freely available on the web to anyone
2. authors providing free copies of their articles, either before or after peer review, on their own web site or an institutional web site (e.g., departmental or library site)."

The responses show that 17.2% of the respondents had published in OA journals, and 31% planned on doing so in the future. 18% of the respondents put up pre-prints of their articles and 26.1% put up copies of their published articles. So the results point to a significant population already involved in open access publishing. In addition, 51% of the respondents agreed or strongly agreed with the statement: "I think OA publishing is becoming important for the generation and dissemination of knowledge." Open access efforts have much to build on: a considerable group of existing practitioners and a perception among many that OA is becoming more important.

However, there are some points that are important to consider when looking at these results. The first is that there are currently wide differences between disciplines in use and perceptions concerning OA. As the recent Center for the Study of Higher Education study (Harley, 2010) made clear, differences in disciplinary methods of assigning credit and value to publishing in various forms and forums are great, and those looking to advance their careers are often tied to existing criteria for advancement. These disciplinary differences show up in our data also, with medical and natural science faculty participating in OA activities more than others, for instance. These disciplinary differences in participation in OA publishing, combined with the differences among types of instructors (tenure-track, vs lecturers, for instance) in adoption of OCW discussed in earlier work using these data (Hardin, 2010), length of experience differences that point to younger instructors embracing OCW more than older (as reported at the recent OCWC conference, and as the data in this survey support), and differences between campuses as seen here and in another study using these OCW questions (Hardin et al, 2010), one must be extremely careful, and detailed in their analyses, in discussing the possible relations *between* OCW and OA beliefs and participation. While the early analyses we have underway do show possibly interesting relations between the two types of open publishing, open access and open courseware, for example between beliefs in the growing importance of OA and the intention to contribute OCW materials, they also show that these relations are moderated by the considerations mentioned above and hence not at all straightforward. Future analyses, and future data brought to these analyses, will help us understand much better how faculty think and act concerning open activities.

Conclusion and Invitation to Participate

The investigation of instructor and student orientations toward OCW and OA is really just beginning. As these studies show, there is considerable interest and a significant community of potential contributors to OCW in the researched institutions of higher education, and the results of surveys of these types can help expose that often latent demand and provide insight into how to invest resources in local OCW developments. Providing similar data on ongoing practices and developing perspectives on OA among faculty may be of similar use in developing local OA efforts or expanding existing ones. Finally, investigating the relationships between instructors' thinking on OA and OCW publishing will provide us both insight into how these creators of open resources approach these activities themselves, and give us ways to approach these faculty in the development of expanding communities of open scholarship.

Building these understandings, both within regional and local communities and between them, rests on increasing the number of participants in the survey of institutions of higher education globally. What we have described here are just first steps. The next steps involve both deepening our analyses and understanding of existing data and building a much larger base of data, one that can naturally include longitudinal studies as we combine snapshots of institutions such as those discussed here. Then we can get a feel for the evolving understandings and activities that instructors and students bring to open education and research as they develop over the coming years. And we can increase our contributions to the building of those communities. For anyone interested in participating in this type of investigations, or who would like help in using these tools in understanding their own local communities, please contact the authors.
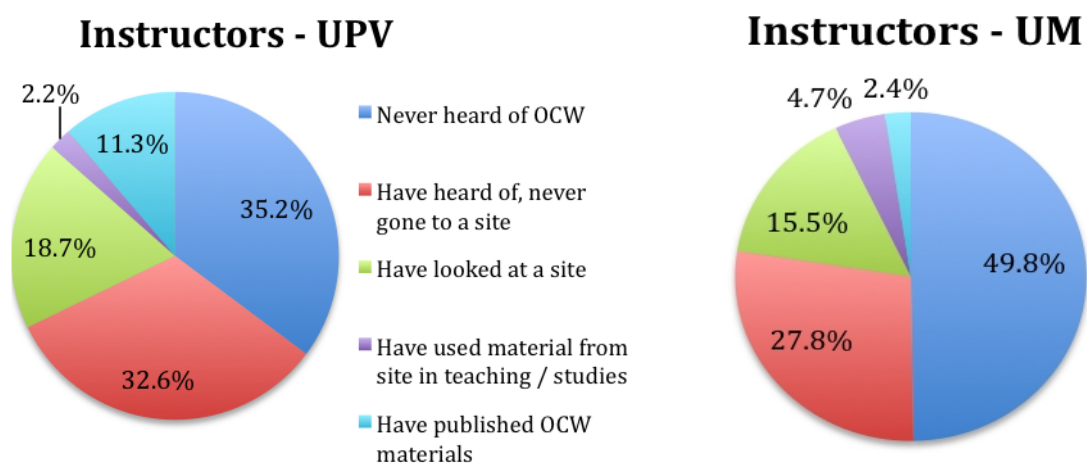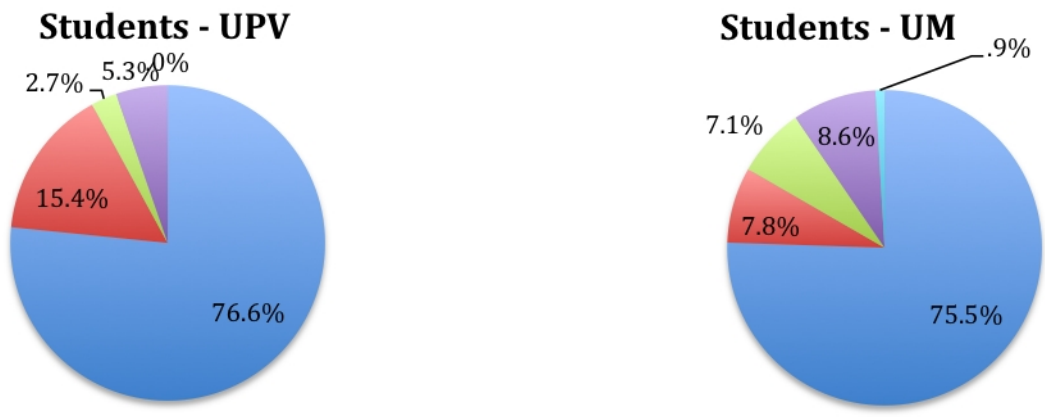
Figures
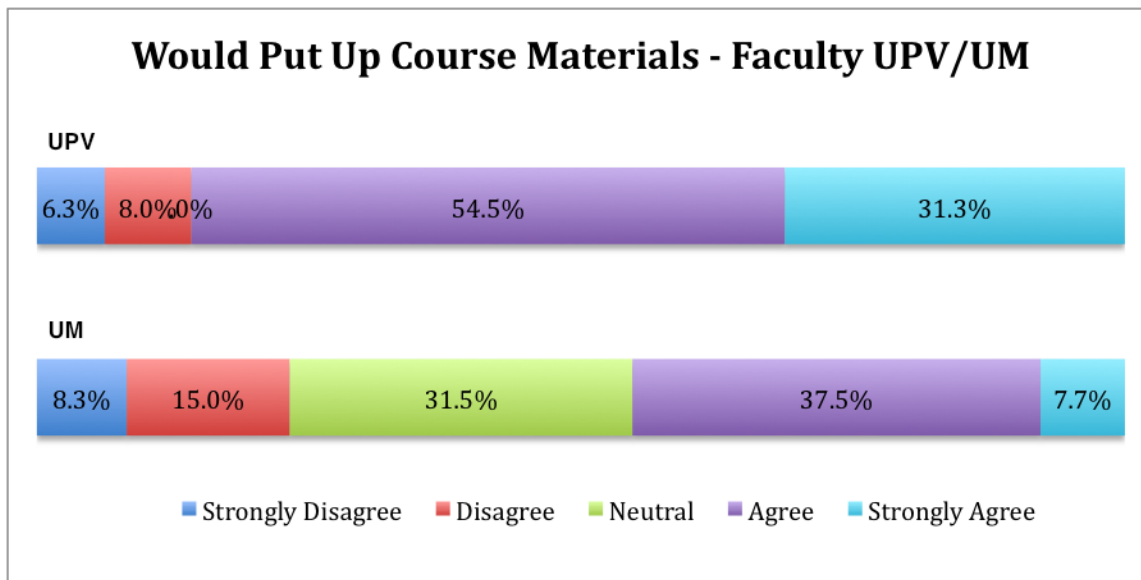

Figure 1: Instructor Familiarity with OCW.

Students - UPV

2.7% 5.3% 0%

15.4%

76.6%

Students - UM

.9%

7.1% 8.6%

7.8%

75.5%

Figure 2: Student Familiarity with OCW

Would Put Up Course Materials - Faculty UPV/UM

UPV

| 6.3% | 8.0% | 0% | 54.5% | 31.3% |

UM

| 8.3% | 15.0% | 31.5% | 37.5% | 7.7% |

■ Strongly Disagree ■ Disagree ■ Neutral ■ Agree ■ Strongly Agree

Figure 3: Comparison of "Would put up course materials on local OCW site" responses.

Would Use OCW Materials - Faculty UPV/UM

UPV
4.3% 3.80% 58.6% 33.3%

UM
4.7% 7.5% 32.1% 45.8% 9.9%

■ Strongly Disagree ■ Disagree ■ Neutral ■ Agree ■ Strongly Agree
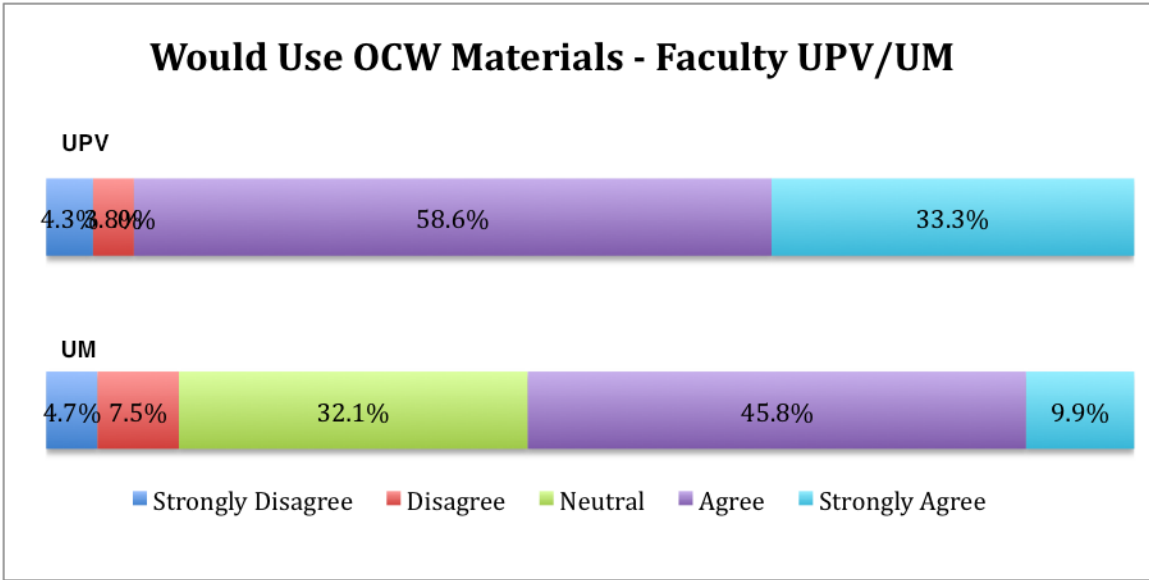
Figure 4: Comparison of "Would use materials from local OCW site."

Would Encourage Others - Faculty UPV/UM

UPV
2.3% 1.70% 63.4% 32.6%

UM
6.4% 11.5% 43.9% 30.4% 7.9%

■ Strongly Disagree ■ Disagree ■ Neutral ■ Agree ■ Strongly Agree
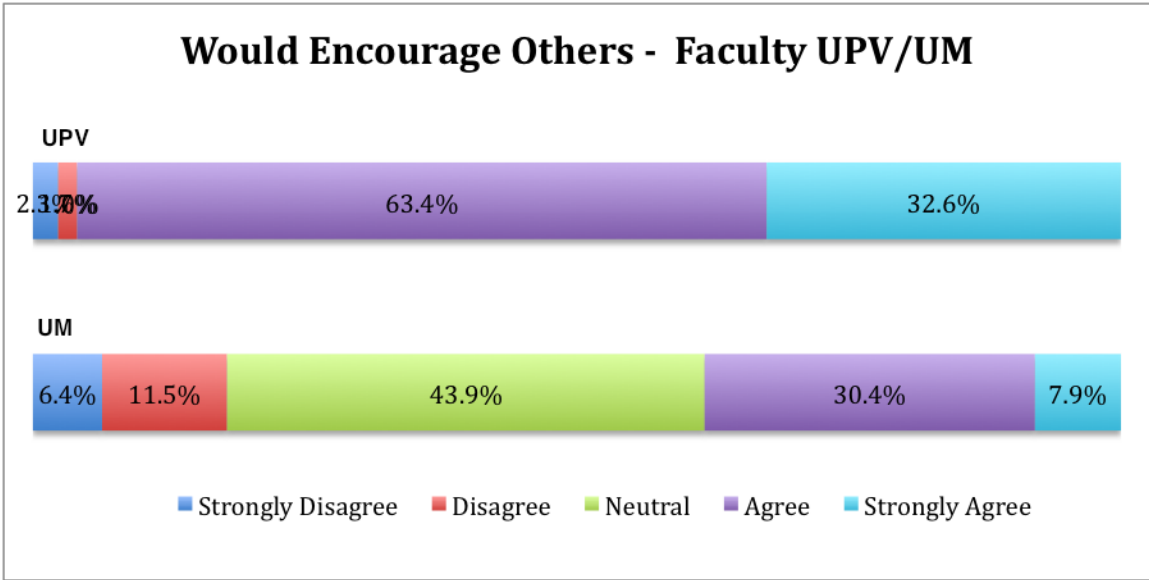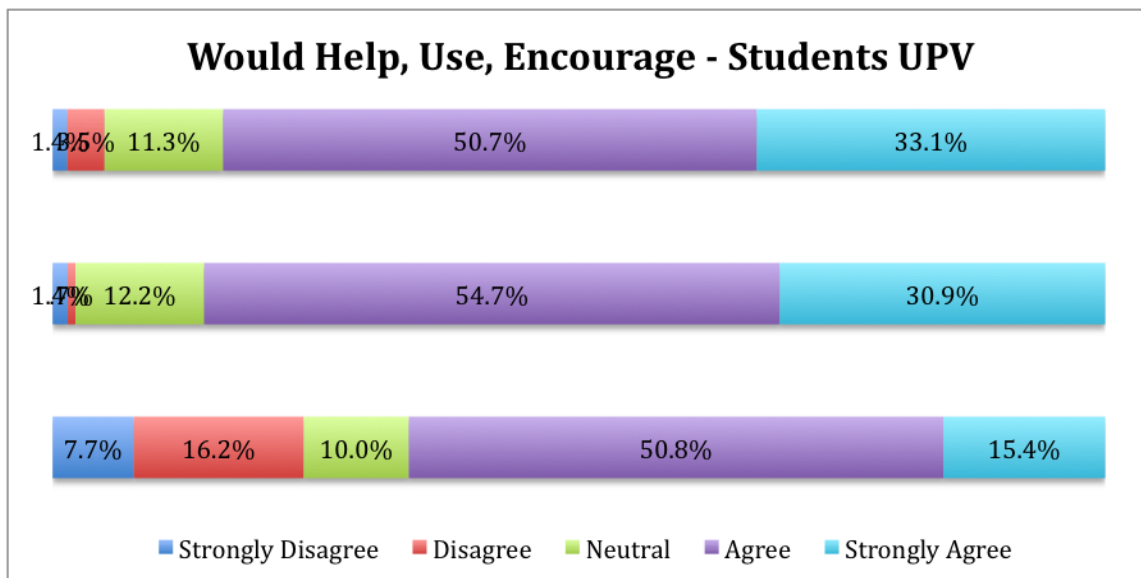
Figure 5: Comparison of "Would encourage my colleagues to publish materials on a local OCW site."

Figure 6: Universidad Politecnica de Valencia student responses to "Would volunteer to help faculty publish

Would Help, Use, Encourage - Students UPV

1.4% 3.5% 11.3% | 50.7% | 33.1%

1.4% 7% 12.2% | 54.7% | 30.9%

7.7% | 16.2% | 10.0% | 50.8% | 15.4%

■ Strongly Disagree ■ Disagree ■ Neutral ■ Agree ■ Strongly Agree

course materials...on local OCW site (top); "Would use course materials or other educational resources from local site (middle); "Would encourage other students to use course materials from local OCW site" (bottom)
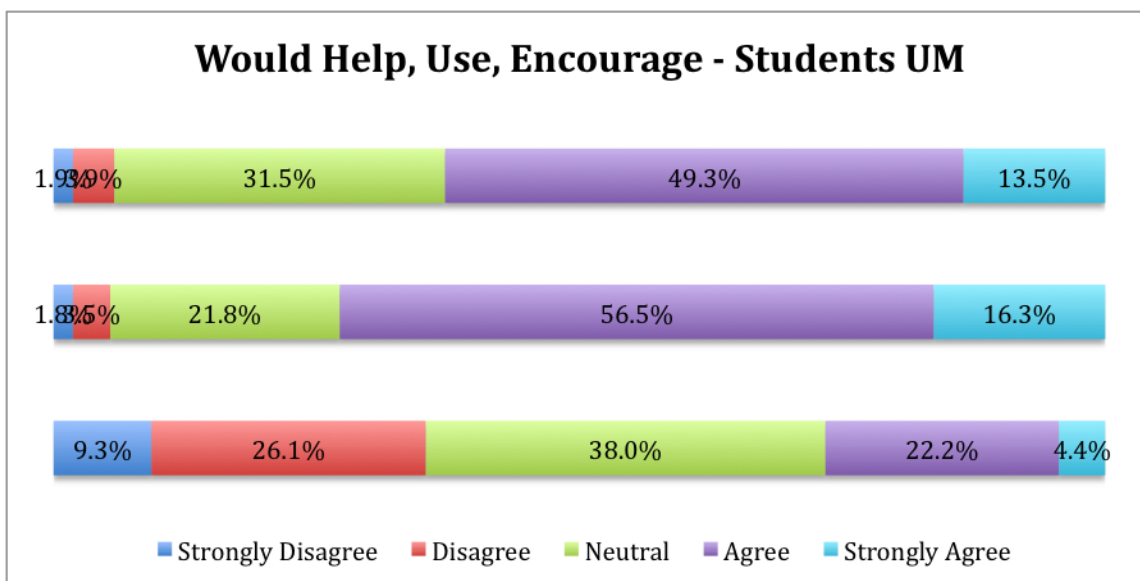

Would Help, Use, Encourage - Students UM

1.9% 3.9% | 31.5% | 49.3% | 13.5%

1.8% 3.5% | 21.8% | 56.5% | 16.3%

9.3% | 26.1% | 38.0% | 22.2% | 4.4%

■ Strongly Disagree ■ Disagree ■ Neutral ■ Agree ■ Strongly Agree

Figure 7: University of Michigan student responses to "Would volunteer to help faculty publish course materials...on local OCW site (top); "Would use course materials or other educational resources from local site (middle); "Would encourage other students to use course materials from local OCW site" (bottom)
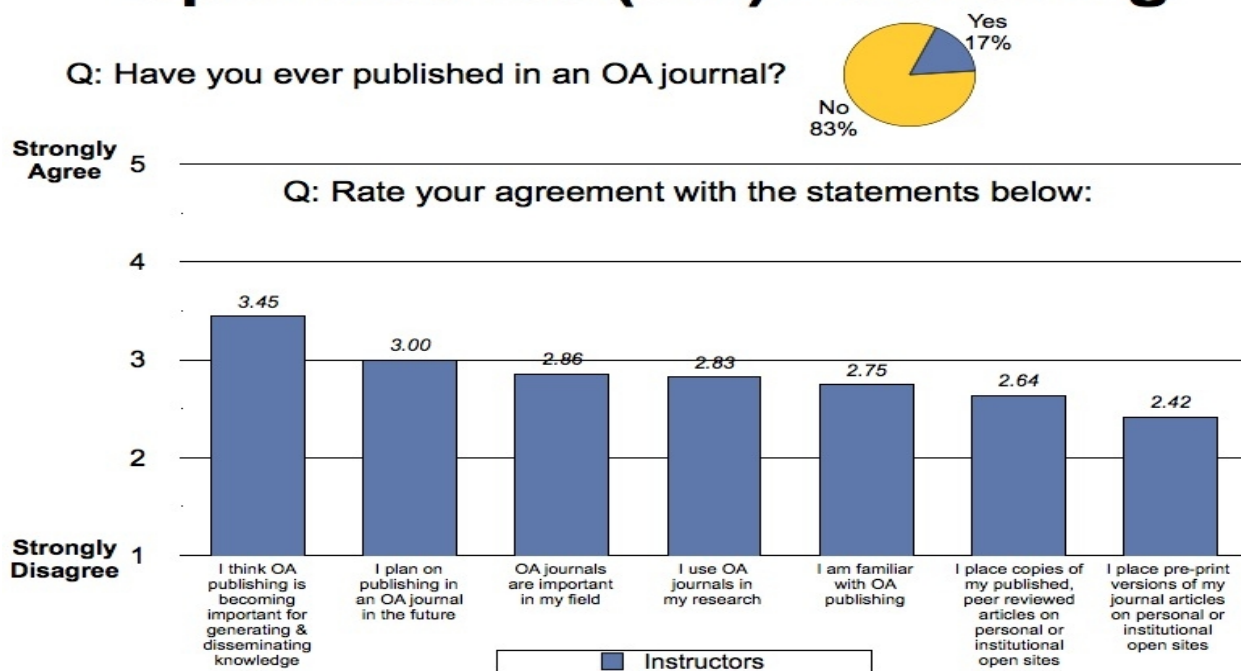
Figure 8: Results from University of Michigan Open Access (OA) questions.

References:

Carson, S, (2009), **2009 Program Evaluation Findings Summary**.
http://ocw.mit.edu/ans7870/global/09_Eval_Summary.pdf

Hardin, Joseph (2010), **OCW Creation in HE Institutions**, OCWC 2010 International Conference, Hanoi.
http://www-personal.umich.edu/~hardin/Talks/OCWC2010Hanoi

Hardin, Severin and Pușcă, (2010), **Open CourseWare (OCW) Contributions: Recent Results from Romanian and American Teaching Staff and Student Surveys** (under submission, IADIS 2010 Timisoara Conference)
http://www-personal.umich.edu/~hardin/Talks/IADIS2010-HardinOCW-finalpdf.pdf

Harley, D. et al, (2010) **Assessing the Future Landscape of Scholarly Communication: An Exploration of Faculty Values and Needs in Seven Disciplines,** January 2010; Center for the Study of Higher Education, University of California, Berkeley. http://cshe.berkeley.edu/research/scholarlycommunication/
Lane, A. B. Katz, R. N. (ed) (2008) **Who puts the education into open educational content?**. *The tower and the cloud: Higher education and information technology revisited* EDUCAUSE , Boulder, CO

Lee, Mary et al, 2010, Tufts Opencourseware, *Statistical Analysis: Pop-up Survey Results: 2009 - Faculty,* April 14, 2010, personal correspondence

Lonn, S., Teasley, S. D., & Krumm, A. (2010). **Selected results from the 2010 CTools survey: Ann Arbor campus instructors and students.** https://ctools.umich.edu/access/content/public/surveys

Lonn-MISI, 2010a - http://confluence.sakaiproject.org/display/UDAT/2010+MISI

Lonn-MISI, 2010b - http://confluence.sakaiproject.org/display/UDAT/2009+MISI+Selected+Results

Lovett, M., Meyer, O., & Thille, C. (2008). **The Open Learning Initiative: Measuring the effectiveness of the OLI statistics course in accelerating student learning.** *Journal of Interactive Media in Education.* http://jime.open.ac.uk/2008/14

MIT site surveys, 2010, http://ocw.mit.edu/OcwWeb/web/about/stats/index.htm

Miyagawa, Shigeru, **OpenCourseWare at Home: While OCW idea takes off globally, project provides tangible benefits to the MIT community**, MIT Faculty newsletter Vol. XVIII No 3